MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

SECTION 319 NPS PROJECT 09-05/319

PROJECT TITLE:	Phosphorus Mitigation Program for Cranberry Bogs on White Island Pond
NPS CATEGORY:	Implementation
INVESTIGATOR:	Cape Cod Cranberry Growers' Association
LOCATION:	Buzzards Bay Basin

DESCRIPTION:

This project is specifically targeted to cranberry growers located on White Island Pond in Plymouth. The Pond is a 294-acre Great Pond and is listed as a Category 5 on the 2006 Integrated List of Waters due to nutrients, organic enrichment/low dissolved oxygen, turbidity, and noxious aquatic plants.

Cranberry production is currently one of the largest components of the Massachusetts agricultural economy. An abundant freshwater supply, mainly surface water from ponds, rivers, and reservoirs, is required for standard cultural practices, and most acreage exists in wetland settings.

Conducting cranberry farming in ways that minimize negative impacts to surface waters is obviously in the interests of the farmer and a benefit to ecosystem sustainability. It is also a community concern, since cranberry farming may contribute to nutrient loading and subsequent water quality degradation in ponds and other surface waters. While implementation of existing BMPs for cranberry production can help to protect water resources, recent research, funded by an EPA/DEP 319 Grant (Project 01-12/319), has shown that some standard practices, in particular flood use and discharge and up-welling groundwater flowing through beds, may be a source of water quality degradation even when nutrient use is limited. Discharge of nutrients in stream-flow from bogs and during flood cycles remains of concern.

The long term goal of this project is to reduce phosphorous to .2 mg/l or less from the bog outflows. During the term of this grant, the goal is to determine the remediation methods that will reduce phosphorous from the bog outflow water (.2 mg P/l or less) while maintaining plant vigor and berry production. This requires phosphorous remediation expertise, knowledge of cranberry production practices, engineering, and scientific analysis.

Project tasks include

1. Collection and analysis of water samples,
2. Determining effective ways to remove or mitigate phosphorus from bog discharge,
3. Produce soil/tissue test results on plant health,
4. Updating of the White Island Pond Conservation Alliance throughout the project,
5. Dedicated location on web site for data reports and ongoing activities, and
6. Reporting

PROJECT COST:	$ 49,576
FUNDING:	$ 29,716 by the US EPA $ 19,860 by the Cape Cod Cranberry Growers' Association
DURATION:	2009 – 2012